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| 10/588,385   | 08/02/2006  | Hiroshi Yoshida             | 0171-1295PUS1       | 8375             |
| 2292 7590 08/13/2008<br>BIRCH STEWART KOLASCH & BIRCH<br>PO BOX 747<br>FALLS CHURCH, VA 22040-0747 |             |                             |                     |                  |
| EXAMINER<br>SINCLAIR, DAVID M  |             |                             |                     |                  |
| ART UNIT<br>2831   |             | PAPER NUMBER                |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

### Office Action Summary

**Application No.**

10/588,385

**Applicant(s)**

YOSHIDA ET AL.

**Examiner**

DAVID M. SINCLAIR

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date 08/02/2006 & 11/06/2006
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

#### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

#### ***Claim Objections***

4. Claim 2 recites the limitation "the ionic liquid" in line 2. There is insufficient antecedent basis for this limitation in the claim.

For the purpose of examination, the examiner is taking "the ionic liquid" to read "the at least one ionic liquid".

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO03/091198 hereafter referred to as Yuyama in view of Oyama et al. (5,891,822).

In regards to claim 1,

Yuyama discloses an electric double layer capacitor comprising a pair of polarizable electrodes and an electrolyte (page 14 – lines 18-24); which electric double layer capacitor is characterized in that the polarizable electrodes are composed primarily of activated carbon (page 15 – lines 6-16), and the electrolyte includes at least an ionic liquid in a concentration of more than 2.0 mol/L (page 14 – line 19 to page 15 - line 5). Yuyama fails to explicitly disclose

the activated carbon having micropores with a pore radius distribution peak as determined by the MP method in a range of  $5.0 \times 10^{-10}$  to  $1.0 \times 10^{-9}$  m.

Oyama '822 teaches activated carbon used as an electrode for an electric double layer capacitor wherein said activated carbon has micropores with a pore radius distribution peak as determined by the MP method in a range of  $5.0 \times 10^{-10}$  to  $1.0 \times 10^{-9}$  m (column 2 – lines 23-27 & 51-57; pore size is the pore diameter which would give a radius of 5 to 10 Å and mode implies peak).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the pore radius distribution peak taught by Oyama '822 with the activated carbon of Yuyama to obtain an electric double layer capacitor with a large energy density.

In regards to claim 2,

The references as applied above disclose all the limitations of claim 2 except the electrolyte is composed solely of the ionic liquid. However, Yuyama further discloses the electrolyte is composed solely of the ionic liquid (page 14 – lines 19-24; an ionic liquid implies the electrolyte is composed solely of a single ionic liquid).

In regards to claim 3,

The references as applied above disclose all the limitations of claim 3 except the electrolyte includes two or more ionic liquids. However, Yuyama further discloses the electrolyte includes two or more ionic liquids (page 14 – lines 19-24; organic solution and one or more ionic compound).

In regards to claim 4,

The references as applied above disclose all the limitations of claim 4 except the ionic liquid is a quaternary ammonium salt or a quaternary phosphonium salt. However, Yuyama further discloses the ionic liquid is a quaternary ammonium salt or a quaternary phosphonium salt (page 4 – line 25 to page 5 – line 3).

In regards to claim 5,

The references as applied above disclose all the limitations of claim 5 except the ionic liquid has the following general formula (1)

[Chemical Formula 1]

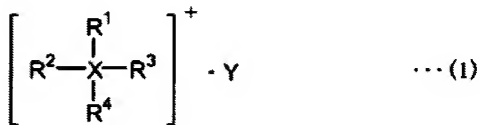


wherein R<sup>1</sup> to R<sup>4</sup> are each independently an alkyl group of 1 to 5 carbons or an alkoxyalkyl group of the formula R'-O-(CH<sub>2</sub>)<sub>n</sub>- (R' being methyl or ethyl, and the letter n being an integer from 1 to 4) and any two from among R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>

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may together form a ring, with the proviso that at least one of  $R^1$  to  $R^4$  is an alkoxyalkyl group of the above formula; X is a nitrogen atom or a phosphorus atom; and Y is a monovalent anion. However, Yuyama further discloses the ionic liquid has the following general formula (1)

[Chemical Formula 1]

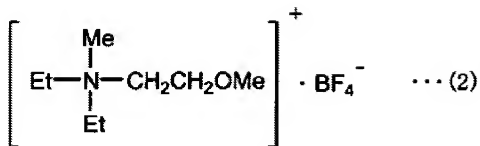


wherein  $R^1$  to  $R^4$  are each independently an alkyl group of 1 to 5 carbons or an alkoxyalkyl group of the formula  $R'-O-(CH_2)_n$ - ( $R'$  being methyl or ethyl, and the letter n being an integer from 1 to 4) and any two from among  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  may together form a ring, with the proviso that at least one of  $R^1$  to  $R^4$  is an alkoxyalkyl group of the above formula; X is a nitrogen atom or a phosphorus atom; and Y is a monovalent anion (page 4 – line 25 to page 5 – line 9).

In regards to claim 6,

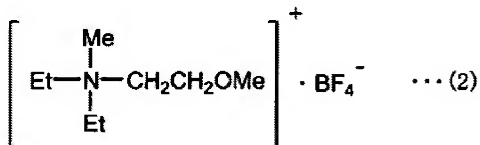
The references as applied above disclose all the limitations of claim 6 except the ionic liquid has the following formula (2)

[Chemical Formula 2]



wherein Me stands for methyl and Et stands for ethyl. However, Yuyama further discloses the ionic liquid has the following formula (2)

[Chemical Formula 2]



wherein Me stands for methyl and Et stands for ethyl (page 7 – line 16 to page 8 – line 20).

In regards to claim 7,

The references as applied above disclose all the limitations of claim 7 except the activated carbon is a chemically activated product of at least one carbonized material selected from among coal-based pitch, petroleum-based pitch, coke and mesophase carbon. However, Yuyama further discloses the activated carbon is a chemically activated product of at least one carbonized material selected from



among coal-based pitch, petroleum-based pitch, coke and mesophase carbon (page 5 – lines 6-18).

8. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO2004/019356 hereafter referred to as Sato in view of Yuyama.

In regards to claim 1,

Sato discloses an electric double layer capacitor comprising a pair of polarizable electrodes and an electrolyte; which electric double layer capacitor is characterized in that the polarizable electrodes are composed primarily of activated carbon having micropores with a pore radius distribution peak as determined by the MP method in a range of  $5.0 \times 10^{-10}$  to  $1.0 \times 10^{-9}$  m, and the electrolyte includes at least an ionic liquid (page 3 – lines 1-6). Sato fails to disclose the electrolyte includes at least an ionic liquid in a concentration of more than 2.0 mol/L.

Yuyama teaches an electrolyte for an electric double layer capacitor wherein disclose the electrolyte includes at least an ionic liquid in a concentration of more than 2.0 mol/L (page 14 – line 28 to page 15 – line 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the concentration taught by Yuyama as the

concentration of the ionic liquid taught by Sato to obtain an electric double layer capacitor that is capable of being charged and discharged at large currents.

In regards to claim 2,

The references as applied above disclose all the limitations of claim 2 except the electrolyte is composed solely of the ionic liquid.

Yuyama teaches the electrolyte is composed solely of the ionic liquid (page 14 – line 19-24; an ionic liquid implies the electrolyte is composed solely of a single ionic liquid).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a sole ionic liquid as taught by Yuyama when forming the electrolyte of Sato to obtain an electric double layer capacitor that is capable of being charged and discharged at large currents.

In regards to claim 3,

The references as applied above disclose all the limitations of claim 3 except the electrolyte includes two or more ionic liquids.

Yuyama teaches the electrolyte includes two or more ionic liquids (page 14 – line 19-24; organic solution and one or more ionic compound).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use two or more ionic liquids as taught by Yuyama when forming the electrolyte of Sato to obtain an electric double layer capacitor that is capable of being charged and discharged at large currents.

In regards to claim 4,

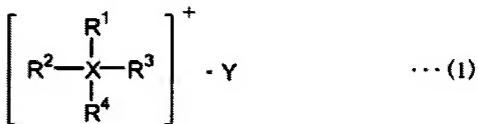
The references as applied above disclose all the limitations of claim 4 except the ionic liquid is a quaternary ammonium salt or a quaternary phosphonium salt.

However, Sato further discloses the ionic liquid is a quaternary ammonium salt or a quaternary phosphonium salt (page 3 – lines 1-8).

In regards to claim 5,

The references as applied above disclose all the limitations of claim 5 except the ionic liquid has the following general formula (1)

[Chemical Formula 1]

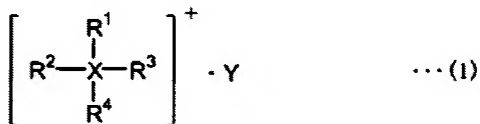


wherein  $\text{R}^1$  to  $\text{R}^4$  are each independently an alkyl group of 1 to 5 carbons or an alkoxyalkyl group of the formula  $\text{R}'\text{-O}-(\text{CH}_2)_n-$  ( $\text{R}'$  being methyl or ethyl, and the

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letter n being an integer from 1 to 4) and any two from among  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  may together form a ring, with the proviso that at least one of  $R^1$  to  $R^4$  is an alkoxyalkyl group of the above formula; X is a nitrogen atom or a phosphorus atom; and Y is a monovalent anion. However, Sato further discloses the ionic liquid has the following general formula (1)

[Chemical Formula 1]

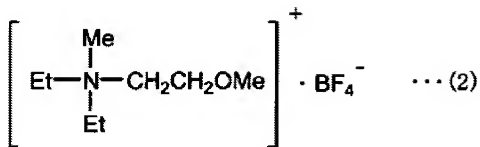


wherein  $R^1$  to  $R^4$  are each independently an alkyl group of 1 to 5 carbons or an alkoxyalkyl group of the formula  $R'-O-(CH_2)_n-$  ( $R'$  being methyl or ethyl, and the letter n being an integer from 1 to 4) and any two from among  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  may together form a ring, with the proviso that at least one of  $R^1$  to  $R^4$  is an alkoxyalkyl group of the above formula; X is a nitrogen atom or a phosphorus atom; and Y is a monovalent anion (page 2 – line 19 to page 3 – line 18)

In regards to claim 6,

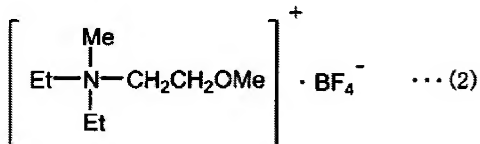
The references as applied above disclose all the limitations of claim 6 except the ionic liquid has the following formula (2)

[Chemical Formula 2]



wherein Me stands for methyl and Et stands for ethyl. However, Sato further discloses the ionic liquid has the following formula (2)

[Chemical Formula 2]



wherein Me stands for methyl and Et stands for ethyl (page 3 – lines 19-22).

In regards to claim 7,

The references as applied above disclose all the limitations of claim 7 except the activated carbon is a chemically activated product of at least one carbonized material selected from among coal-based pitch, petroleum-based pitch, coke and mesophase carbon. However, Sato further discloses the activated carbon is a chemically activated product of at least one carbonized material selected from among coal-based pitch, petroleum-based pitch, coke and mesophase carbon (page 10 – lines 15-19 & page 10 – line 27 to page 11 – line 2).

9. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP1536440 hereafter referred to as Sato 'EP in view of Yuyama.

In regards to claim 1,

Sato 'EP discloses an electric double layer capacitor comprising a pair of polarizable electrodes and an electrolyte; which electric double layer capacitor is characterized in that the polarizable electrodes are composed primarily of activated carbon having micropores with a pore radius distribution peak as determined by the MP method in a range of  $5.0 \times 10^{-10}$  to  $1.0 \times 10^{-9}$  m, and the electrolyte includes at least an ionic liquid (claim 1). Sato 'EP fails to disclose the electrolyte includes at least an ionic liquid in a concentration of more than 2.0 mol/L.

Yuyama teaches an electrolyte for an electric double layer capacitor wherein disclose the electrolyte includes at least an ionic liquid in a concentration of more than 2.0 mol/L (page 14 – line 28 to page 15 – line 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the concentration taught by Yuyama as the concentration of the ionic liquid taught by Sato 'EP to obtain an electric double layer capacitor that is capable of being charged and discharged at large currents.

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In regards to claim 2,

The references as applied above disclose all the limitations of claim 2 except the electrolyte is composed solely of the ionic liquid.

Yuyama teaches the electrolyte is composed solely of the ionic liquid (page 14 – line 19-24; an ionic liquid implies the electrolyte is composed solely of a single ionic liquid).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a sole ionic liquid as taught by Yuyama when forming the electrolyte of Sato 'EP to obtain an electric double layer capacitor that is capable of being charged and discharged at large currents.

In regards to claim 3,

The references as applied above disclose all the limitations of claim 3 except the electrolyte includes two or more ionic liquids.

Yuyama teaches the electrolyte includes two or more ionic liquids (page 14 – line 19-24; organic solution and one or more ionic compound).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use two or more ionic liquids as taught by Yuyama when

forming the electrolyte of Sato 'EP to obtain an electric double layer capacitor that is capable of being charged and discharged at large currents.

In regards to claim 4,

The references as applied above disclose all the limitations of claim 4 except the ionic liquid is a quaternary ammonium salt or a quaternary phosphonium salt. However, Sato 'EP further discloses the ionic liquid is a quaternary ammonium salt or a quaternary phosphonium salt (claim 2).

In regards to claim 5,

The references as applied above disclose all the limitations of claim 5 except the ionic liquid has the following general formula (1)

[Chemical Formula 1]



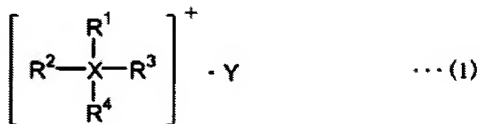
wherein R<sup>1</sup> to R<sup>4</sup> are each independently an alkyl group of 1 to 5 carbons or an alkoxyalkyl group of the formula R'-O-(CH<sub>2</sub>)<sub>n</sub>- (R' being methyl or ethyl, and the letter n being an integer from 1 to 4) and any two from among R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup> may together form a ring, with the proviso that at least one of R<sup>1</sup> to R<sup>4</sup> is an alkoxyalkyl group of the above formula; X is a nitrogen atom or a phosphorus



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atom; and Y is a monovalent anion. However, Sato 'EP further discloses the ionic liquid has the following general formula (1)

[Chemical Formula 1]

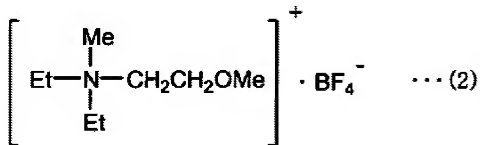


wherein R<sup>1</sup> to R<sup>4</sup> are each independently an alkyl group of 1 to 5 carbons or an alkoxyalkyl group of the formula R'-O-(CH<sub>2</sub>)<sub>n</sub>- (R' being methyl or ethyl, and the letter n being an integer from 1 to 4) and any two from among R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup> may together form a ring, with the proviso that at least one of R<sup>1</sup> to R<sup>4</sup> is an alkoxyalkyl group of the above formula; X is a nitrogen atom or a phosphorus atom; and Y is a monovalent anion (claim 3)

In regards to claim 6,

The references as applied above disclose all the limitations of claim 6 except the ionic liquid has the following formula (2)

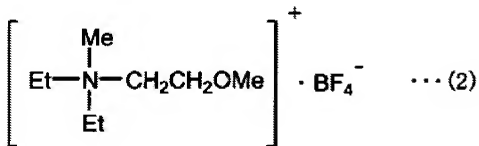
[Chemical Formula 2]



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wherein Me stands for methyl and Et stands for ethyl. However, Sato 'EP further discloses the ionic liquid has the following formula (2)

[Chemical Formula 2]



wherein Me stands for methyl and Et stands for ethyl (claim 4).

In regards to claim 7,

The references as applied above disclose all the limitations of claim 7 except the activated carbon is a chemically activated product of at least one carbonized material selected from among coal-based pitch, petroleum-based pitch, coke and mesophase carbon. However, Sato 'EP further discloses the activated carbon is a chemically activated product of at least one carbonized material selected from among coal-based pitch, petroleum-based pitch, coke and mesophase carbon ([0040] & [0042]).

### ***Double Patenting***

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims

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are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thornton*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1 & 4-6 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 & 3-4 of U.S. Patent No. 7,342,769 in view of Yuyama.

In regards to claim 1,

U.S. Patent No. 7,342,769 claims an electric double layer capacitor comprising a pair of polarizable electrodes and an electrolyte; which electric double layer capacitor is characterized in that the polarizable electrodes are composed primarily of activated carbon having micropores with a pore radius distribution peak as determined by the MP method in a range of  $5.0 \times 10^{-10}$  to  $1.0 \times 10^{-9}$  m, and the electrolyte includes at least an ionic liquid (claim 1). U.S. Patent No. 7,342,769 fails to claim the electrolyte includes at least an ionic liquid in a concentration of more than 2.0 mol/L.

Yuyama teaches an electrolyte for an electric double layer capacitor wherein disclose the electrolyte includes at least an ionic liquid in a concentration of more than 2.0 mol/L (page 14 – line 28 to page 15 – line 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the concentration taught by Yuyama as the concentration of the ionic liquid claimed by U.S. Patent No. 7,342,769 to obtain an electric double layer capacitor that is capable of being charged and discharged at large currents.

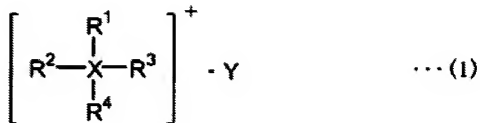
In regards to claim 4,

US Patent 7,342,769 as modified above by Yuyama claims all the limitations of claim 4 except the ionic liquid is a quaternary ammonium salt or a quaternary phosphonium salt. However, U.S. Patent No. 7,342,769 further claims the ionic liquid is a quaternary ammonium salt or a quaternary phosphonium salt (claim 1).

In regards to claim 5,

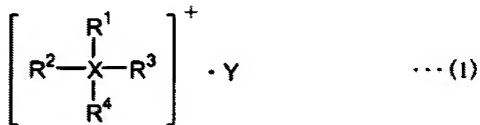
US Patent 7,342,769 as modified above by Yuyama claims all the limitations of claim 5 except the ionic liquid has the following general formula (1)

[Chemical Formula 1]



wherein  $\text{R}^1$  to  $\text{R}^4$  are each independently an alkyl group of 1 to 5 carbons or an alkoxyalkyl group of the formula  $\text{R}'\text{-O}-(\text{CH}_2)_n$ - ( $\text{R}'$  being methyl or ethyl, and the letter  $n$  being an integer from 1 to 4) and any two from among  $\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$  and  $\text{R}^4$  may together form a ring, with the proviso that at least one of  $\text{R}^1$  to  $\text{R}^4$  is an alkoxyalkyl group of the above formula;  $\text{X}$  is a nitrogen atom or a phosphorus atom; and  $\text{Y}$  is a monovalent anion. However, U.S. Patent No. 7,342,769 further claims the ionic liquid has the following general formula (1)

[Chemical Formula 1]

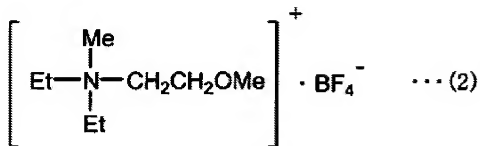


wherein  $\text{R}^1$  to  $\text{R}^4$  are each independently an alkyl group of 1 to 5 carbons or an alkoxyalkyl group of the formula  $\text{R}'\text{-O}-(\text{CH}_2)_n$ - ( $\text{R}'$  being methyl or ethyl, and the letter  $n$  being an integer from 1 to 4) and any two from among  $\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$  and  $\text{R}^4$  may together form a ring, with the proviso that at least one of  $\text{R}^1$  to  $\text{R}^4$  is an alkoxyalkyl group of the above formula;  $\text{X}$  is a nitrogen atom or a phosphorus atom; and  $\text{Y}$  is a monovalent anion (claim 3)

In regards to claim 6,

US Patent 7,342,769 as modified above by Yuyama claims all the limitations of claim 6 except the ionic liquid has the following formula (2)

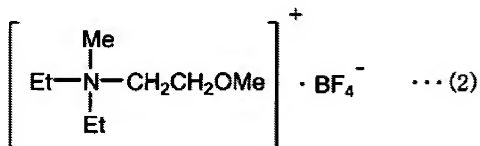
[Chemical Formula 2]



wherein Me stands for methyl and Et stands for ethyl. However, U.S. Patent No.

7,342,769 further claims the ionic liquid has the following formula (2)

[Chemical Formula 2]



wherein Me stands for methyl and Et stands for ethyl (claim 4).

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yuyama et al. (7,167,353)

Sato et al. (7,297,289)

Sato et al. (6,414,837) discloses activated carbon used as an electrode for an electric double layer capacitor wherein said activated carbon has micropores with a pore radius distribution peak as determined by the MP method in a range of  $5.0 \times 10^{-10}$  to  $1.0 \times 10^{-9}$  m.

Hirota et al. (4,740,434) discloses activated carbon used as an electrode for secondary battery wherein said activated carbon has micropores with a pore radius distribution peak as determined by the MP method in a range of  $5.0 \times 10^{-10}$  to  $1.0 \times 10^{-9}$  m.

Sato et al. (5,877,935) discloses activated carbon used as an electrode for an electric double layer capacitor wherein said activated carbon has micropores with a pore radius distribution peak as determined by the MP method in a range of  $5.0 \times 10^{-10}$  to  $1.0 \times 10^{-9}$  m.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID M. SINCLAIR whose telephone number is (571)270-5068. The examiner can normally be reached on Mon - Thurs. 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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